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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,900	02/03/2004	Meng-An Pan	58268.00349	9190
32294	7590	10/20/2005	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P. 14TH FLOOR 8000 TOWERS CRESCENT TYSONS CORNER, VA 22182			TRA, ANH QUAN	
		ART UNIT	PAPER NUMBER	2816

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/769,900	PAN, MENG-AN
	<b>Examiner</b>	<b>Art Unit</b>
	Quan Tra	2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 29 July 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-17 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-17 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/17/05 has been entered.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-10 and 12-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Simon (US 2004/0174199).

As to claim 1, Simon discloses in figure 3 a method, comprising: receiving an input current (output of 22) from a digital to analog converter (circuit that comprises DAC 19, amplifiers 20, transistors 22 and resistor 24 is a digital to analog converter which converts digital signal to analog current); mirroring the input current (by 11, 12, 29, 30); converting the received input current to a voltage (by 11); filtering the voltage (by 29, 30); and converting the filtered voltage into an output current (by 12) using the mirrored input current.

As to claim 2, figure 3 shows that the step of filtering is performed by a low pass filter.

As to claim 4, figure 3 shows the step of outputting the output current to a mixer (2-6).

As to claim 5, figure 3 shows that the step of converting the received input voltage and converting the filtered voltage are performed by a first and second MOSFET (11, 12), respectively.

As to claim 6, figure 3 shows that the second MOSFET is the inverse of the first.

As to claim 7, figure 3 shows that the filtering filters out clocking glitches and quantization noise.

As to claim 8, figure 3 shows that the filtering yields a DC gain of one.

Claims 9, 10 and 12-17 recite similar limitations of claims above. Therefore, they are rejected for the same reasons.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba et al. (US 2003/0146780) in view of Simon (US 2004/0174199).

As to claims 1, 2, 4-10 and 12-17, Chiba et al.'s figure 2 shows a DAC 103b, a current mirror (135, 136) receiving current from the DCA and a mixer (133, 132) receiving current from the current mirror. Thus, figure 2 shows all limitations of the claims except for a filter circuit coupled between transistors in the current mirror. However, Simon's figure 3 shows a multiplier circuit having low-pass filter (29, 30) coupled between transistors (11 and 12) in current mirror circuit in order to improve the noise properties of the multiplier (paragraph [0039]). Therefore, it

would have been obvious to one having ordinary skill in the art to employ Simon's teaching for Chiba et al.'s figure 2 for the purpose of improving the noise properties of the circuit.

As to claim 3 and 11, the modified Chiba et al.'s figure 2 all limitations of the claims except for the filter is a third order filter. However, it is notoriously well known in the art that a higher order, the better the filter performs. Therefore, it would have been obvious to one having ordinary skill in the art to use a third order filter for the Simon's low pass filter in order to improve the performance of the circuit.

5. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon (US 2004/0174199).

Simon's figure 3 shows all limitations of the claims except for the filter is a third order filter. However, it is notoriously well known in the art that a higher order, the better the filter performs. Therefore, it would have been obvious to one having ordinary skill in the art to use a third order filter for the Simon's low pass filter in order to improve the performance of the circuit.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 571-272-1755. The examiner can normally be reached on 8:00 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2816

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QUAN TRA  
PRIMARY EXAMINER  
ART UNIT 2816

October 19, 2005